filled in later by what he hoped would be a more cooperative, post-Bush US government. Some diplomats mistakenly thought Gore was telling them to give up their tough stance at Bali.

The biggest bit of theater wasn't generally reported as theater at all. And that was a European push to include non-binding language in the preamble of the Bali Roadmap. That language called on developed nations to cut their emissions by 25 to 40 percent, in the next dozen or so years. The United States of course objected. Their argument was based in part on the inconvenient truth that it would be impossible to achieve. It's hard to deny that, when you consider that most European nations will only reach their much more modest Kyoto treaty targets by buying their way out, rather than reducing domestic emissions. Never mind. This drama played out as the Europeans intended. They came away looking greener than green, secure in the knowledge that the US would take the heat for balking at an impossible but impressive sounding goal.

In the end, being in the hallway at 3 a.m. was actually a bad call on my part. Unlike most climate negotiations, in this round there was no final backroom deal. The hitch wasn't US versus Europe, but North versus South. Some developing countries wouldn't agree to language that would commit them to "measurable, reportable and verifiable" mitigation actions. Instead, in a dramatic, open plenary session that took place long after delegations were supposed to have packed their bags, India managed to rewrite that language to make assistance to the developing world, rather than the developing world's actions, "measurable, reportable and verifiable." The assembled crowd then had a choice — swallow this odd contortion, or risk having the entire Bali process blow up. At first the US objected. But when it became evident that theirs was the lone voice, and the US could take the heat for scuttling the talks, America backed down. That final session was, at last, the action we had come to see — and not just theater.

Richard F. Harris is a science correspondent for National Public Radio and past president of the National Association of Science Writers. E-mail: rharris@nasw.org.

New Guinea challenge

This remarkable tropical island is still a source of new species, but development presents a continuing threat. **Nigel Williams** reports.

The announcement last month of the discovery of two new species of mammal in western (Indonesian) New Guinea made news around the world last month. The pygmy possum and giant rat were found during an expedition to the Foja Mountains — a pristine wilderness that has already revealed a rich array of new species of plants and animals.

The Foja wilderness is part of the Mamberamo Basin, one of the least disturbed regions in the Asia-Pacific region. The tree-dwelling pygmy possum belongs to the Cercatetus group of marsupials and is one of

Palm pressures: Tropical forests are under growing pressure to be cleared for palm plantations as the world price for the oil soars. (Picture: Dimas Ardian/Getty Images.)

the world's smallest. The giant rat is about the size of a cat and has been classified as belonging to the *Mallomys* genus of rodents.

The region has the largest area of tropical forest without roads or trails. Its isolation is helped by its steep mountain slopes and difficult terrain. The Foja mountains rise to 2,200 metres and, although humans live at the base of the mountains, abundant game available for tribes at these lower levels has helped prevent local people venturing up the mountains in search of food. Western scientists have made several visits in recent years to the region with the help of helicopters. The first researchers described a scene of many unknown plants and animals that were unafraid of humans.

But the pressures on tropical forest regions continues to grow, in spite of increasing concern, as raised at last month's Bali climate conference. And as the media celebrated the discovery of the new mammals, plans were announced for major expansion of oil palm plantations in Papua New Guinea, the eastern half of the island.

New Britain Palm Oil, Australasia's largest producer of palm oil, announced plans to raise funds on the London Stock market to double its 40,000 hectares of plantations in Papua New Guinea and the Solomon Isles.

Over the past year, the price of palm oil has almost doubled from around $580 per tonne to $950 per tonne. The increase is due to a number of factors, including rising interest from biofuel producers, as well as huge demand from China and India as an ingredient for a range of foods. Competition for land for other crops such as soybeans has also pushed up the value of potential plantation land.

While the Foja mountains may yet remain too remote for development, the threat to neighbouring, more accessible forests is rising. With Western economies in turmoil over rising oil prices and credit problems, it was an irony for conservationists that the recommended stock for investors this year by an economist in one British newspaper was that of New Britain Palm Oil, regarded as having beneficial tax advantages and "some of the best plantations in the world". Tropical forest conservation faces an increasingly tough battle.

Algal biofuel hopes

The US Department of Energy gave up a decade ago but the prospect of biofuel from algae is making a surprise return. **Michael Gross** reports.

Programs aiming to produce biofuel from farmed crops came under attack last year, amidst fears that they might affect food prices and turn out less than perfectly green in terms of land use and energy invested in the farming process. Meanwhile, greener projects aimed at converting agricultural waste into fuel appear to receive less funding and attention than the large-scale programs.

Now the major oil company Royal Dutch Shell plc has rocked the biofuels tanker by announcing a joint venture project with Hawaii-based HR Biopetroleum, aimed at farming algae in seawater ponds to produce biofuels. The new company, Cellana, is set to begin the construction of a 2.5 hectare demonstration facility immediately. The site of the new algae farm is just next door to facilities where algae are already grown commercially for the pharmaceutical industry.

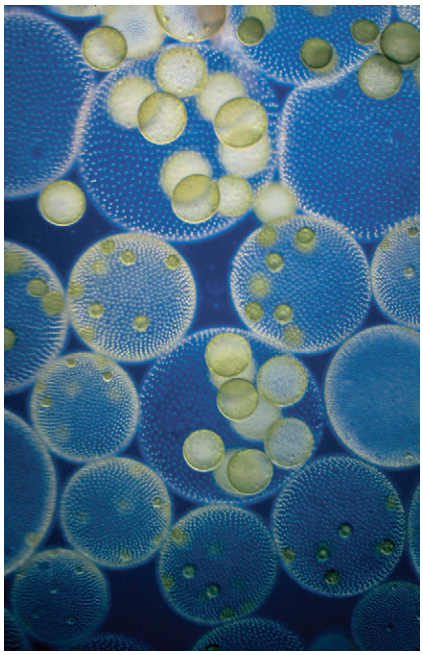
Algae have long been an outsider among biofuel crops. The US Department of Energy (DoE) has funded research into algal fuels under the Aquatic Species Program from 1978 to 1996, but then switched resources to other programs, for example, using maize as a feedstock for bioethanol.

However, algae are known to have several advantages that make them potentially a greener fuel feedstock than crops like maize. They produce more fuel per farmed area of land than maize, rapeseed, or jatropha. Moreover, they can be grown on land that is not suitable for conventional agriculture, e.g. because of its salinity. As Michael Briggs from the University of New Hampshire has argued, the North American deserts would provide more than enough land for algae ponds that could cover the entire demand for transport fuels in the US.

Every now and again, new attempts are made at tapping the potential of algae, even though analysts seem to think that the petrol prices recently have not been high enough for algal biofuel to become competitive. But with crude oil hitting the key $100 a barrel mark at the beginning of this month, and demand continuing to soar at unexpected rates in the developing economies of countries such as India and China, interest is already growing in fuel alternatives and likely to gather pace dramatically in coming years, with increasing efforts to determine the most promising leads.

In April 2006, the start-up company Solix Biofuels was set up in Fort Collins, Colorado, to develop a microalgae reactor technology which could be used in conjunction with existing power stations, running the carbon dioxide in closed cycles. The company is currently involved in optimising the process and finding the best species of algae for such reactors.

In June the same year, oil company PetroSun started a wholly owned subsidiary called Algae Biofuels to operate in the US and Australia, to investigate the production of biodiesel, ethanol, methanol, methane, and hydrogen from microalgae. The company, which was later renamed PetroSun Biofuels, recently announced a feedstock supply agreement with the company BioAlternatives, under which PetroSun supplies half of its algae production



Power cells: New studies are looking into the potential of algae to provide biofuel economically. (Picture: Roland Birke/Photolibrary.)